

Title (en)
HIGH-FREQUENCY POWER SUPPLY DEVICE AND REFLECTED WAVE POWER CONTROL METHOD

Title (de)
HOCHFREQUENZ-STROMVERSORGUNGSVORRICHTUNG SOWIE VERFAHREN ZUR STROMSTEUERUNG REFLEKTIERTER WELLEN

Title (fr)
DISPOSITIF D'ALIMENTATION ÉLECTRIQUE À HAUTE FRÉQUENCE ET PROCÉDÉ DE RÉGULATION BASÉ SUR LA PUISSANCE D'ONDES RÉFLÉCHIES

Publication
EP 2833703 B1 20170419 (EN)

Application
EP 13807713 A 20130603

Priority
• JP 2012136942 A 20120618
• JP 2013065339 W 20130603

Abstract (en)
[origin: EP2833703A1] In an RF power supply for supplying RF power to a plasma load, reflected wave power control is performed in which the reflected wave power of an RF generator is detected and, using the detected reflected wave power, the RF generator is controlled. For a short-time variation in reflected wave power, control is performed based on a peak value variation in the detection value of reflected wave power. For a long-time variation in reflected wave power, control is performed based on a variation in a smoothed value obtained by smoothing detection values of reflected wave power. A reflected wave power control loop system includes a reflected wave power peak value dropping loop system and an arc blocking system that perform control based on a peak variation in reflected wave power and a reflected wave power amount dropping loop system that performs control based on a smoothed power amount of reflected wave power. In the non-ignition state before plasma is ignited, the RF generator provides total reflected wave power tolerance that is the ability to tolerate total reflected wave power generated when forward wave power all returns to the generator side as reflected wave power.

IPC 8 full level
H05H 1/46 (2006.01); **H01J 37/32** (2006.01); **H02M 1/08** (2006.01); **H02M 7/539** (2006.01); **H05H 1/00** (2006.01)

CPC (source: EP KR US)
H01J 37/32082 (2013.01 - EP US); **H01J 37/32146** (2013.01 - US); **H01J 37/32174** (2013.01 - US); **H01J 37/32183** (2013.01 - EP KR US); **H01J 37/32944** (2013.01 - EP KR US); **H01J 37/3299** (2013.01 - EP KR US); **H02M 1/08** (2013.01 - US); **H02M 7/539** (2013.01 - US); **H05H 1/46** (2013.01 - EP KR US); **H05H 2242/26** (2021.05 - EP KR US)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 2833703 A1 20150204; EP 2833703 A4 20150923; EP 2833703 B1 20170419; CN 104322154 A 20150128; CN 104322154 B 20151125; DE 13807713 T1 20150521; IN 2415KON2014 A 20150501; JP 2014002898 A 20140109; JP 5534365 B2 20140625; KR 101523484 B1 20150527; KR 20140147158 A 20141229; PL 2833703 T3 20170929; TW 201401937 A 20140101; TW I472270 B 20150201; US 2015084509 A1 20150326; US 9070537 B2 20150630; WO 2013190987 A1 20131227

DOCDB simple family (application)
EP 13807713 A 20130603; CN 201380028359 A 20130603; DE 13807713 T 20130603; IN 2415KON2014 A 20141029; JP 2012136942 A 20120618; JP 2013065339 W 20130603; KR 20147034773 A 20130603; PL 13807713 T 20130603; TW 102100411 A 20130107; US 201314394341 A 20130603